

RECEIVED
CENTRAL FAX CENTERSerial No. 09/771,229
Page 2 of 12

DEC 28 2006

AMENDMENTS TO THE CLAIMS

1. (Thrice amended) A receiver circuit arranged in a receiving [A clock phase detecting circuit arranged in a receiving] unit of multiplex radio equipment, comprising:

an identifying circuit for identifying a demodulated signal at a predetermined identification level, said demodulated signal being obtained by demodulating a multilevel orthogonal modulated signal;

a clock regenerating circuit for regenerating a signal identification clock for said identifying circuit to supply said signal identification clock to said identifying circuit;

an equalizing circuit for subjecting said demodulated signal obtained by demodulating the multilevel orthogonal modulated signal to an equalizing process; and

a clock phase detecting unit for detecting a phase component of said signal identification clock based on errors between input and output signals of said equalizing circuit and then for supplying said phase component to said clock regenerating circuit;

wherein said clock phase detecting unit includes:

an error detecting unit for detecting a signal error between said input and output signals of said equalizing circuit[:]; and

a clock phase calculating unit for detecting the phase component of said signal identification clock by calculating the detection outputs from said error detecting unit.

2. (Thrice amended) A receiver circuit arranged in a receiving [A clock phase detecting circuit arranged in a receiving] unit of multiplex radio equipment, comprising:

an identifying circuit for identifying a demodulated signal at a predetermined identification level, said demodulated signal being obtained by demodulating a multilevel

Best Available Copy

orthogonal modulated signal;

a clock regenerating circuit for regenerating a signal identification clock for said identifying circuit to supply said signal identification clock to said identifying circuit;

an equalizing circuit for subjecting said demodulated signal obtained by demodulating the multilevel orthogonal modulated signal to an equalizing process; and

a clock phase detecting unit for detecting a phase component of said signal identification clock based on input and output signals of said equalizing circuit and then for supplying said phase component to said clock regenerating circuit;

wherein said clock phase detecting unit comprising:

an error detecting unit for detecting a signal error between said input and output signals of said [equilizing] equalizing circuit;

a signal inclination detecting unit for detecting the inclination of said demodulated signal; and

a clock phase calculating unit for operating the phase component of said signal identification clock by calculating based on respective outputs from said error detecting unit and said signal inclination detecting unit.

3. (Amended) A receiver circuit arranged in a receiving [The clock phase detecting circuit arranged in the receiving] unit of multiplex radio equipment, according to claim 2, wherein said signal inclination detecting unit comprising:

a delaying unit for delaying the output from said identifying circuit; and

a comparing unit for comparing the output from said identifying circuit with the output

Best Available Copy

from said delaying unit to detect the inclination of said demodulated signal.

4. (Amended) A receiver circuit arranged in a receiving [The clock phase detecting circuit arranged in the receiving] unit of multiplex radio equipment, according to claim 2, wherein said identifying circuit is operated with high speed clocks; and wherein said signal inclination detecting unit comprising:

a delaying unit for delaying the output from said identifying circuit, said delaying unit being operated with said high speed clocks;

a latching unit for holding the output from said identifying circuit and the output from said delaying unit with clocks slower than said high speed clocks; and

a comparing unit for comparing the output of said identifying circuit held in said latching unit with the output from said delaying unit to detect the inclination of said demodulated signal.

5. (Twice amended) A receiver circuit arranged in a receiving [The clock phase detecting circuit arranged in the receiving] unit of multiplex radio equipment, according to claim 2, wherein said identifying circuit comprises plural identifying units corresponding to the number of plural demodulated signals obtained by demodulating said multilevel orthogonal modulated signal; and wherein said signal inclination detecting unit includes a comparing unit that compares outputs of said plural identifying units with each other to detect the inclination of the demodulated signal when clocks with different predetermined phase shift between said plural identifying units are supplied to said plural identifying units.

6. (Amended) A receiver circuit arranged in a receiving [The clock phase detecting